



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,756	11/20/2003	Warren Thomas Johnson	USFMCR.3C1C1	1448
20995	7590	03/25/2005	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			MENON, KRISHNAN S	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			1723	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,756

Applicant(s)

JOHNSON ET AL

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 22-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-8, 10-18 and 22-33 is/are rejected.  
7) ☒ Claim(s) 9 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-18 and 22-33 are pending after the amendment of 2/24/05

#### ***Double Patenting***

Claims 32 and 33 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 17 and 18. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The additional limitation in claims 32 and 33 are recited verbatim in claims 18 and 17 respectively.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Okano et al (US 4,547,289).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them

Art Unit: 1723

to prevent axial withdrawal of the sub-module, the clip being resiliently biased, radially contractable and slides on the circumference of the collar of the sub-module, as in claim 1 (see figures 1-17). Housing is in fluid communication with the collar as in claim 2 (see fig). Collar has an internal stepped seat for engaging the sub-module (at 9) as in claim 3. locking formation has radially outwardly directed circumferential flange (see fig ) as in claim 4.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 5-8, 10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of Jenkins (US 6,048,454).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them to prevent axial withdrawal of the sub-module as in claim 1 (see figures 1-17). Instant Claims add further limitations not taught by Okano, as follows: The clip is cylindrical with split sidewall which has a top and bottom in claim 5. The clip comprises radially

Art Unit: 1723

inwardly directed circumferential flanges on top and bottom to engage with the sleeve and the collar in claims 6 and 7. Clip has projections on the sidewall adjacent the edges in claim 8. The top flange is partially circumferential in claim 10. Clip is mutually inter-engageable in claim 12, and adapted for over-centered circumferential locking in claim 13. Jenkins (454) teaches a clip in a filter apparatus which is cylindrical having split sidewalls and circumferential and inwardly directing flanges and means for circumferential locking (see fig 9). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Jenkins in the teaching of Okano because the details of the clip in Okano (part 17) are not clear, and the Jenkins clip is easy to operate (see Jenkins col 4 lines 16-20).

2. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of Selbie et al (US 5,405,528).

Okano teaches a membrane manifold comprising a housing (2), a sub-module connecting collar (see figures) adapted to receive the sub-module, sub-module sleeve with locking formation (see at 17) so that the sub-module can be secured to the collar by a clip (17) adapted to engage both collar and locking formation by surrounding them to prevent axial withdrawal of the sub-module as in claim 1 (see figures 1-17). Claims 14-16 add further limitations not taught by Okano, but taught by Selbie: Four sub-modules in the manifold in claim 14 (Selbie teaches multiple sub-modules – see figures). Collars are disposed in a common plane in claim 15 (see Selbie figures). One end of housing is adjacent each collar and axis of housing parallel with axis of collar

Art Unit: 1723

(Selbie-figures). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Selbie in the teaching of Okano to provide multiple modules for larger volume processing with easily replaceable filter cartridges (Selbie abstract).

3. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289) in view of McKinney (US 4,107,043).

Okano teaches all the limitations of claim 11, as in claim 1 above, except for the clip being hingedly connected. However, it would be obvious to one of ordinary skill in the art at the time of invention to hingedly connect the clip to the collar, a commonly used practice to prevent misplacing the clip like the lid 14 to the filter housing 10 of McKinney, fig 1, or like pegging a tool to an apparatus.

4. Claims 17,18,30,32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbie et al (US 5,405,528) in view of Okano (289), Jenkins (454) and Liang et al (US 5,895,570).

Selbie discloses a filter manifold with hollow fiber bundle filter cartridges (fig 1, 6), the apparatus has manifolds as head and base pieces (fig 1), a collar (56-fig 1) adapted to receive the housing (11-fig 1), connecting sleeve with locking formation (20, 31-fig 1), clip adapted to engage the collar and lock formation (68-fig 2 and 20) that prevents axial withdrawal of the module as in claim 17. The newly added limitation of 'adapted for

Art Unit: 1723

connection to filtrate' or 'cleaning fluid' is only functional language. The prior arts have connection ports available for such connections.

Selbie does not teach a clip that surrounds the collar and the sleeve ends as in claim 17. Okano in view of Jenkins teaches such a clip in a sub-module and manifold arrangement as in claim 1 above. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Okano in view of Jenkins in the teaching of Selbie to have good mechanical seal that prevents entry of original water in to the filtrate during disassembly (Okano – abstract and col 2 lines 14-32) and have very quick release of the clip (Jenkins col 4 lines 16-20).

Selbie also does not teach having the cleaning fluid conduit between two pairs of collars as claimed. However, placing a conduit for fluid inlet or outlet between filter housings or collars in filter clusters is a matter of convenience and ease in assembly/disassembly, and is commonly employed, as is seen in Liang'570 (abstract, figures). One would use the teaching of Liang in the teaching of Selbie because the Liang teaching provides much easier modular connections to connect any number of cartridges together.

Claims 18,30 and 32: Selbie has manifold arrangement in both head and base. In any case, head or base piece is interchangeable by the orientation of the module in Okano and would not be patentably different.

Claim 33: the limitation of claim 33 is duplicated form claim 17 and is already addressed in claim 17.

5. Claims 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbie et al (US 5,405,528) in view of Okano (289) and Jenkins (454).

Selbie discloses a bank of filtration apparatus (see fig 5 and 6), a filter manifold with hollow fiber bundle filter cartridges (fig 1, 6), the apparatus has manifolds as head and base pieces (fig 1), a collar (56-fig 1) adapted to receive the housing (11-fig 1), connecting sleeve with locking formation (20, 31-fig 1), clip adapted to engage the collar and lock formation (68-fig 2 and 20) that prevents axial withdrawal of the module, and filtrate and cleaning fluid conduits (43-fig 2; col 14 lines 26-42– back wash) as in claim 22.

Selbie does not teach a clip that surrounds the collar and the sleeve ends as in claim 22. Okano in view of Jenkins teaches such a clip in a sub-module and manifold arrangement as in claim 1 above. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Okano in view of Jenkins in the teaching of Selbie to have good mechanical seal that prevents entry of original water in to the filtrate during disassembly (Okano – abstract and col 2 lines 14-32) and have very quick release of the clip (Jenkins col 4 lines 16-20).

Claims 23-29 add the further limitations to claim 22 above, which are taught by Selbie: filtrate and cleaning fluid conduits are above head and base piece (fig 2) as in claim 23; cleaning fluid conduit between two pairs of sub-module collars as in claim 24 (see 43-fig 2), aperture in cleaning fluid conduit (72, fig 2), housing is in communication with the filtrate conduit (49-fig 2), the array is adapted to be inserted in an open bank, and there is an array train as in instant claims 25-30 (fig 1, 6).

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okano (289).

Okano teaches a membrane apparatus having a filter submodule () with semipermeable fiber bundle (), a removable head piece (), a base piece comprising a cap (), the head piece being a manifold having a housing (), a collar (), a connecting sleeve (), and a clip that engages and locks the submodule with the collar to prevent axial withdrawal as claimed. Okano does not teach the base piece as removable. However, making the base piece, that is the cap, separable is an obvious matter of choice, unless applicant can show with evidence that the removable cap is unobvious over the prior art. Making integral (one piece) or separable (two-part) would be a matter of obvious engineering choice (*In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 CCPA 1965); *In re Dulberg*, 289 F.2d 522,523, 129 USPQ 348,349 (CCPA 1961)).

***Allowable Subject Matter***

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior arts, Okano in view of Jenkins, does not teach a clip that enable radial contraction with sliding engagement that has projections extending longitudinally from top of the flange

### ***Response to Arguments***

Applicant's arguments filed 2/24/05 have been fully considered but they are not persuasive.

In response to the argument that the sliding engagement of the clip on the collar is not taught by Okano: This radial contraction – sliding engagement is common in C-clamps, and is not novel.

With respect to the argument re the newly added elements in claim 17: the 'adapted' language for the filtrate or the cleaning fluid do not add to patentability since the claim is for an apparatus and the apparatus provides the required connection ports. Re the placing of cleaning fluid conduit between the collars, there is nothing novel in running a conduit between the collars or the housings. This is addressed in the rejection with an additional reference.

Re claim 22, Selbie teaches connections for the various fluids. Cleaning fluid only adds functional language, which is not patentable in the apparatus claim.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 1723


TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon  
Patent Examiner

  
W. L. WALKER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700